

PEIDONG WANG

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(Updated: 2025/03/19)

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA 2019 - 2025 (expected)

PhD candidate in Climate Science

Advisor: Dr. Susan Solomon

Thesis: Understanding Drivers of Stratospheric Ozone Change and Fingerprinting its Recovery

University of Wisconsin-Madison, Madison, WI 2015 - 2019

B.S. in Atmospheric & Oceanic Sciences

B.S. in Applied Mathematics

Certificate in Computer Science

Advisor: Dr. Tracey Holloway

PROFESSIONAL EXPERIENCE

Stanford University, Palo Alto, CA Aug 2025 - 2028

Stanford Science Fellow

Advisor: Dr. Noah Diffenbaugh

Massachusetts Institute of Technology, Cambridge, MA Sep 2019 - May 2025

Graduate Research Assistant

Advisor: Dr. Susan Solomon

Woods Hole Oceanographic Institution, Falmouth, MA May 2018 - Aug 2018

Summer Student Fellow

Advisor: Dr. Caroline Ummenhofer

University of Wisconsin-Madison, Madison, WI Sep 2016 - May 2019

Undergraduate Research Assistant

Advisor: Tracey Holloway

PUBLICATIONS

- [12] [Peidong Wang](#), Susan Solomon, Benjamin D. Santer, Douglas E. Kinnison, Qiang Fu, Kane A. Stone, Jun Zhang, Gloria L. Manney, Luis F. Millán. **Fingerprinting the Recovery of Antarctic Ozone.** *Nature*, 639(8055), 2025. [Paper Link](#)
- [11] [Peidong Wang](#), Susan Solomon. **Contrasting Chlorine Chemistry on Volcanic and Wildfire Aerosols in the Southern Mid-Latitude Lower Stratosphere.** *Geophysical Research Letters*, 51(18), 2024. [Paper Link](#)
- [10] Jun Zhang, [Peidong Wang](#), Douglas Kinnison, Susan Solomon, Jian Guan, Yunqian Zhu. **Stratospheric chlorine processing after the unprecedented Hunga Tonga eruption.** *Geophysical Research Letters*, 51(17), 2024. [Paper Link](#)

- [9] Glenn Liu, Peidong Wang, Young-Oh Kwon. **Physical Insights from the Multidecadal Prediction of North Atlantic Sea Surface Temperature Variability Using Explainable Neural Networks.** *Geophysical Research Letters*, 50(24), 2023. Paper Link
- [8] Peidong Wang, Susan Solomon, Megan Lickley, Jeffery Scott, Ray Weiss, Ronald Prinn. **On the influence of hydroxyl radical changes and ocean sinks on estimated HCFC and HFC emissions and banks.** *Geophysical Research Letters*, 50(18), 2023. Paper Link
- [7] Peidong Wang, Susan Solomon, Kane Stone. **Stratospheric chlorine processing after the 2020 Australian wildfires derived from satellite data.** *Proceedings of the National Academy of Sciences*, 120(11), 2023. Paper Link
- [6] Susan Solomon, Kane Stone, Pengfei Yu, Daniel Murphy, Doug Kinnison, AR Ravishankara, Peidong Wang. **Chemical impacts of wildfire smoke on stratospheric chlorine and ozone depletion.** *Nature*, 615(7951), 2023. Paper Link
- [5] Peidong Wang, Janni Yuval, Paul A. O’Gorman. **Non-local parameterization of atmospheric subgrid processes with neural networks.** *Journal of Advances in Modeling Earth Systems*, 14(10), 2022. Paper Link
- [4] Peidong Wang, Tracey Holloway, Matilyn Bindl, Monica Harkey, Isabelle De Smedt. **Ambient Formaldehyde over the United States from Ground-Based (AQS) and Satellite (OMI) Observations.** *Remote Sensing*, 14(9), 2022. Paper Link
- [3] Glenn Liu, Peidong Wang, Matthew Beveridge, Young-Oh Kwon, Iddo Drori. **Predicting Atlantic Multidecadal Variability.** *NeurIPS 2021 Workshop on Tackling Climate Change with Machine Learning*, 2021. [Awarded with Best Paper: Pathway to Impact]. Paper Link
- [2] Megan Lickley, Susan Solomon, Doug Kinnison, Paul Krummel, Jens Mhle, Simon O’Doherty, Ronald Prinn, Matthew Rigby, Kane A Stone, Peidong Wang, Ray Weiss, Dickon Young. **Quantifying the Imprints of Stratospheric Contributions to Interhemispheric Differences in Tropospheric CFC-11, CFC-12, and N₂O Abundances.** *Geophysical Research Letters*, 48(15), 2021. Paper Link
- [1] Peidong Wang, Jeffery R. Scott, Susan Solomon, John Marshall, Andrew R. Babbín, Megan Lickley, David W. J. Thompson, Timothy DeVries, Qing Liang, Ronald G. Prinn. **On the Effects of the Ocean on Atmospheric CFC-11 Lifetimes And Emissions.** *Proceedings of the National Academy of Sciences*, 118(12), 2021. Paper Link

TEACHING EXPERIENCE

Teaching assistant	Fall 2021
12.003 Introduction to Atmosphere, Ocean, and Climate Dynamics	
Department of Earth, Atmospheric and Planetary Sciences, MIT	
Teaching assistant	Fall 2017
CS200 Programming I	
Department of Computer Sciences, UW-Madison	

Teaching assistant
CS302 Introduction to Programming
Department of Computer Sciences, UW-Madison

Spring 2017

SELECTED HONORS AND AWARDS

Stanford Science Fellowship, Stanford University	2025 - 2028
Jule Charney Fellowship, PAOC, MIT	2024 - 2025
7th SPARC General Assembly Early Career Presentation award	2022
Norman C. Rasmussen Fellowship, EAPS, MIT	2022
John H. Carlson Fellowship, EAPS, MIT	2020 - 2021
Jule Charney Prize, PAOC, MIT	2019
MIT Presidential Fellowship	2019 - 2020
Herfurth-Kubly Awards for Comprehensive Undergraduate Excellence, UW-Madison	2019
University Book Store Excellence Award, UW-Madison	2019
Lyle Horn Scholarship Award, AOS, UW-Madison	2018
Woods Hole Oceanographic Institution Summer Student Fellowship	2018
Wisconsin Hilldale Undergraduate/Faculty Research Fellowship, UW-Madison	2017 - 2018

SELECTED PRESENTATIONS

- [11] *Fingerprinting the Recovery of Antarctic Ozone*. Oral. Atmosphere Model, Chemistry Climate, Earth System Prediction, Climate Variability & Change, and Whole Atmosphere Working Group Meeting 2025, Boulder, Colorado, Feb 2025.
- [10] *Assessing HCFC-22 loss to the ocean from observations and high-resolution modeling*. Poster. Quadrennial Ozone Symposium, Boulder, Colorado, Jul 2024.
- [9] *Contrasting Stratospheric Chlorine Processes on Volcanic and Wildfire Aerosols in the Mid-latitudes*. Oral. EGU general assembly, Vienna, Austria, Apr 2024.
- [8] *On the influence of hydroxyl radical changes and ocean sinks on estimated HCFC and HFC emissions and banks*. Oral. 68th Meeting of AGAGE Scientists and Cooperating Networks, Boston, Massachusetts, Oct 2023.
- [7] *Stratosphere chlorine processing after a major volcanic eruption or wildfire event*. Poster. VolImpact Summer School, Greifswald, Germany, Sep 2023.
- [6] *Chlorine processing after the 2020 Australian wildfire*. Oral. Stratosphere-troposphere Processes And their Role in Climate (SPARC) 7th General Assembly, Boulder, Colorado, Oct 2022.
- [5] *Predicting Atlantic Multidecadal Variability*. Spotlight talk. NeurIPS 2021 Workshop on Tackling Climate Change with Machine Learning, virtual, Dec 2021.
- [4] *On the effects of the ocean on atmospheric CFCs lifetimes and emissions*. Poster. Quadrennial Ozone Symposium, virtual, Oct 2021.

- [3] *Synthesis of Tree-Ring Records and Coupled Climate Model Simulations to Understand North Atlantic Hydroclimate Responses to Volcanic Eruptions in the Last Millennium*. Poster. American Geophysical Union Fall Meeting, Washington D.C., Dec 2018.
- [2] *The Role of Volcanic Forcing in the North Atlantic Hydroclimate Over the Last Millennium*. Poster. Understanding and Modeling the Earth's Climate: A Symposium in Honor of Isaac Held, Princeton University, NJ, Oct 2018.
- [1] *Formaldehyde Trend Analysis from OMI Satellite Observations and AQS Ground Measurements*. Poster. NASA Health and Air Quality Applied Sciences Team (HAQAST) 3rd. meeting, Columbia University, NY, Nov 2017.

ACADEMIC SERVICES

Committee member: PAOC Colloquium Committee

Proposal Reviewer: NASA ROSES panelist

Journal Reviewer: *Communications Earth & Environment* | *Environmental Science & Technology* | *Geophysical Research Letters* | *Geoscience Letters* | *Remote Sensing of Environment* | *Science Advances*